Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)

2. (Currently Amended) An ~~The~~ air-fuel ratio control apparatus for an internal combustion ~~engine according to Claim 1,~~ engine, the apparatus comprising a control unit that includes control logic implementing integral correction of the air-fuel ratio with an integral term, the integral term being obtained by multiplying an integrated difference between a target air-fuel ratio and the actual air-fuel ratio by an integral gain,

wherein an upper limit value and a lower limit value of the integral term are set based on an actual intake air amount and an actual air-fuel ratio, and ~~wherein~~

the upper and lower limit values are set in such a way to reduce the interval between the limit values as the actual intake air amount decreases.

3. (Currently Amended) An ~~The~~ air-fuel ratio control apparatus for an internal combustion ~~engine according to Claim 1,~~ engine, the apparatus comprising a control unit that includes control logic implementing integral correction of the air-fuel ratio with an integral term, the integral term being obtained by multiplying an integrated difference between a target air-fuel ratio and the actual air-fuel ratio by an integral gain,

wherein an upper limit value and a lower limit value of the integral term are set based on an actual intake air amount and an actual air-fuel ratio, and ~~wherein~~

the upper and lower limit values are set in such a way to reduce the absolute value of each limit value as the actual intake air amount decreases.

4. (Currently Amended) An ~~The~~ air-fuel ratio control apparatus for an internal combustion ~~engine according to Claim 1,~~ engine, the apparatus comprising a control unit that includes control logic implementing integral correction of the air-fuel ratio with an integral

term, the integral term being obtained by multiplying an integrated difference between a target air-fuel ratio and the actual air-fuel ratio by an integral gain,

wherein an upper limit value and a lower limit value of the integral term are set based on an actual intake air amount and an actual air-fuel ratio, and ~~wherein~~

the upper and lower limit values are set in such a way that air-fuel ratio correction with the integral term for a lean air-fuel ratio is limited as the actual air-fuel ratio becomes leaner.

5-6. (Canceled)

7. (Currently Amended) An ~~The~~ air-fuel ratio control apparatus for an internal combustion ~~engine according to Claim 1,~~ engine, the apparatus comprising a control unit that includes control logic implementing integral correction of the air-fuel ratio with an integral term, the integral term being obtained by multiplying an integrated difference between a target air-fuel ratio and the actual air-fuel ratio by an integral gain,

wherein an upper limit value and a lower limit value of the integral term are set based on an actual intake air amount and an actual air-fuel ratio, and ~~wherein~~

air-fuel ratio learning control is implemented, in which a steady state deviation between the actual air-fuel ratio and the target air-fuel ratio is computed based on the history of difference between the air-fuel ratios, and the computed steady state deviation is stored as a learning value, and wherein, until the computation of the steady state deviation is completed, the upper and lower limit values are set in such a way to have a smaller interval between the limit values than that after the computation of the steady state deviation is completed.

8. (Currently Amended) An ~~The~~ air-fuel ratio control apparatus for an internal combustion ~~engine according to Claim 1,~~ engine, the apparatus comprising a control unit that includes control logic implementing integral correction of the air-fuel ratio with an integral

term, the integral term being obtained by multiplying an integrated difference between a target air-fuel ratio and the actual air-fuel ratio by an integral gain,

wherein an upper limit value and a lower limit value of the integral term are set based on an actual intake air amount and an actual air-fuel ratio, and ~~wherein~~

air-fuel ratio learning control is implemented, in which a steady state deviation between the actual air-fuel ratio and the target air-fuel ratio is computed based on a history of difference between the air-fuel ratios, and the computed steady state deviation is stored as a learning value, and wherein, until the computation of the steady state deviation is completed, the upper and lower limits are set in such a way to each have a smaller absolute value than that after the computation of the steady state deviation is completed.

9. (Previously Presented) The air-fuel ratio control apparatus for an internal combustion engine according to Claim 2, wherein the upper and lower limit values are set in such a way to allow larger correction of the air-fuel ratio with the integral term for a lean air-fuel ratio as the actual air-fuel ratio remains leaner than the target ratio for a longer period.

10. (Previously Presented) The air-fuel ratio control apparatus for an internal combustion engine according to Claim 3, wherein the upper and lower limit values are set in such a way to allow larger correction of the air-fuel ratio with the integral term for a lean air-fuel ratio as the actual air-fuel ratio remains leaner than the target ratio for a longer period.

11. (Previously Presented) The air-fuel ratio control apparatus for an internal combustion engine according to Claim 4, wherein the upper and lower limit values are set in such a way to allow larger correction of the air-fuel ratio with the integral term for a lean air-fuel ratio as the actual air-fuel ratio remains leaner than the target ratio for a longer period.

12. (Previously Presented) The air-fuel ratio control apparatus for an internal combustion engine according to Claim 2, wherein the upper and lower limit values are set in

such a way to allow larger correction of air-fuel ratio with the integral term for a rich air-fuel ratio as the actual air-fuel ratio remains richer than the target ratio for a longer period.

13. (Previously Presented) The air-fuel ratio control apparatus for an internal combustion engine according to Claim 3, wherein the upper and lower limit values are set in such a way to allow larger correction of air-fuel ratio with the integral term for a rich air-fuel ratio as the actual air-fuel ratio remains richer than the target ratio for a longer period.

14. (Previously Presented) The air-fuel ratio control apparatus for an internal combustion engine according to Claim 4, wherein the upper and lower limit values are set in such a way to allow larger correction of air-fuel ratio with the integral term for a rich air-fuel ratio as the actual air-fuel ratio remains richer than the target ratio for a longer period.